

We CLAIM:

1. A clamping cartridge for releasably clamping a plurality of panel-type articles in generally parallel spaced-apart manner comprising:
 - a frame;
 - a plurality of clamping mechanisms spaced-apart along the frame, said clamping mechanisms being generally oriented perpendicular to their direction of spacing and being normally biased towards a closed position;
 - actuation means operable in association with said clamping mechanisms for opening and closing said clamping mechanisms in unison;
 - said clamping mechanisms being individually self-adjusting upon closing.
2. The clamping cartridge as claimed in claim 1, wherein:
 - the clamping mechanisms comprise a pair of relatively movable jaws and said actuation means is operable on said jaws for overcoming the closing bias.
3. The clamping cartridge as claimed in claim 2, wherein:
 - a pair of levers are connectable to or integral with each pair of jaws, said actuation means being operable on said levers to open and close said jaws.
4. The clamping cartridge as claimed in claim 3, wherein:
 - said levers have a distal end and wherein when said ends of said pairs of levers are moved relatively toward one another by said actuation means, the jaws are caused to open.
5. The clamping cartridge as claimed in claim 4, wherein:
 - said actuation means comprises camming means and control means for controlling the movement of said camming means; and
 - wherein said distal ends of said levers extend through said frame where they engage said camming means which is operable by said control means to urge together respective pairs of levers of each clamping mechanism so as to cause the

plurality of clamping mechanisms to open in unison and to permit the respective pairs of levers of each clamping mechanism to separate so as to cause the jaws of the plurality of clamping mechanisms to close or clamp.

6. The clamping cartridge as claimed in claim 5, wherein:

said control means comprises a rotatable shaft supported by the frame in said direction of spacing of said clamping mechanisms;

wherein said camming means comprises a plurality of cam wheels which are disposed on said shaft and fixed to rotate with the shaft, said cam wheels having radial sides forming cam surfaces which vary in the axial direction with the revolution of the wheel;

wherein said cam wheels are disposed adjacent the distal ends of said levers whereby a pair of oppositely oriented cam surfaces from adjacent cam wheels are provided for each pair of levers of each clamping mechanism and wherein said pair of cam surfaces are engageable with the distal ends of said pair of levers; and

wherein when said shaft is rotated, said cam surfaces rotate causing the distance between respective pairs of cam surfaces at which said distal ends of said levers are engaged to decrease or increase, thereby actuating said ends of said pair of levers inwardly or outwardly to open or close respectively said jaws of each said clamping mechanism.

7. The clamping cartridge as claimed in claim 6, wherein:

said cam surfaces are generally planar.

8. The clamping cartridge as claimed in claim 2, wherein:

said jaws are biased towards a closed position by a spring clip.

9. The clamping cartridge as claimed in claim 2, wherein:

said jaws of each clamping mechanism extend generally convergently from said frame and wherein said actuation means comprises a slotted guide and moving means for translating said slotted guide towards and away from said housing, said

jaws extending through and being constrained within said slots in said slotted guide such that when said slotted guide is translated away from said housing, each jaw is forced to overcome the closing bias by pivoting towards perpendicular from their inwardly angled convergent position as the distance between the frame and slotted guide increases, thereby causing said jaws of each clamping mechanism to open, and when said slotted guide is translated toward said housing, each jaw is released against the overcoming of the closing bias.

10. The clamping cartridge as claimed in claim 9, wherein:
one slot is provided for each pair of adjacent jaws of adjacent clamping mechanisms.
11. The clamping cartridge as claimed in claim 9, wherein:
said moving means for translating said slotted guide comprises camming means and control means for controlling the movement of said camming means.
12. The clamping cartridge as claimed in claim 11, wherein:
said control means comprises a rotatable shaft supported by the frame in said direction of spacing of said clamping mechanisms, said shaft having an axis;
wherein said camming means comprises at least one cam wheel having a camming surface about its perimeter which varies in the radial direction with respect to the axis of the shaft, and
wherein rotation of said shaft causes the distance between said slotted guide and said housing to vary.
13. The clamping cartridge as claimed in claim 12, wherein:
said camming wheel is generally circular and is mounted on said shaft non-concentrically.

14. The clamping cartridge as claimed in claim 13, wherein:
said camming wheel is disposed within a housing connected to said slotted guide.
15. The clamping cartridge as claimed in claim 14, wherein:
said housing has a slot through which said shaft passes to permit translation of said housing relative to said shaft.
16. A transportation or shipping package comprising one or more clamping cartridges as claimed in claim 1 used for clamping, spacing, separating and/or supporting one or more panel-type articles to be contained therein.
17. The transportation or shipping package as claimed in claim 16, further comprising seating means which cooperate with said one or more clamping cartridges for supporting said articles.
18. The transportation or shipping package as claimed in claim 16, wherein:
the clamping cartridges are provided in pairs, one clamping cartridge of each said pair being oriented generally perpendicularly to the other for clamping adjacent perpendicular edges of said articles.
19. The transportation or shipping package as claimed in claim 18, wherein:
the clamping mechanisms of one of the clamping cartridges of each perpendicular pair align in the same plane with the corresponding clamping mechanisms of the other clamping cartridge of the pair.
20. The transportation or shipping package as claimed in claim 18, wherein:
the perpendicular clamping cartridge pairs are disposed at an angle to the transportation or shipping package.